GRIDDED MOS

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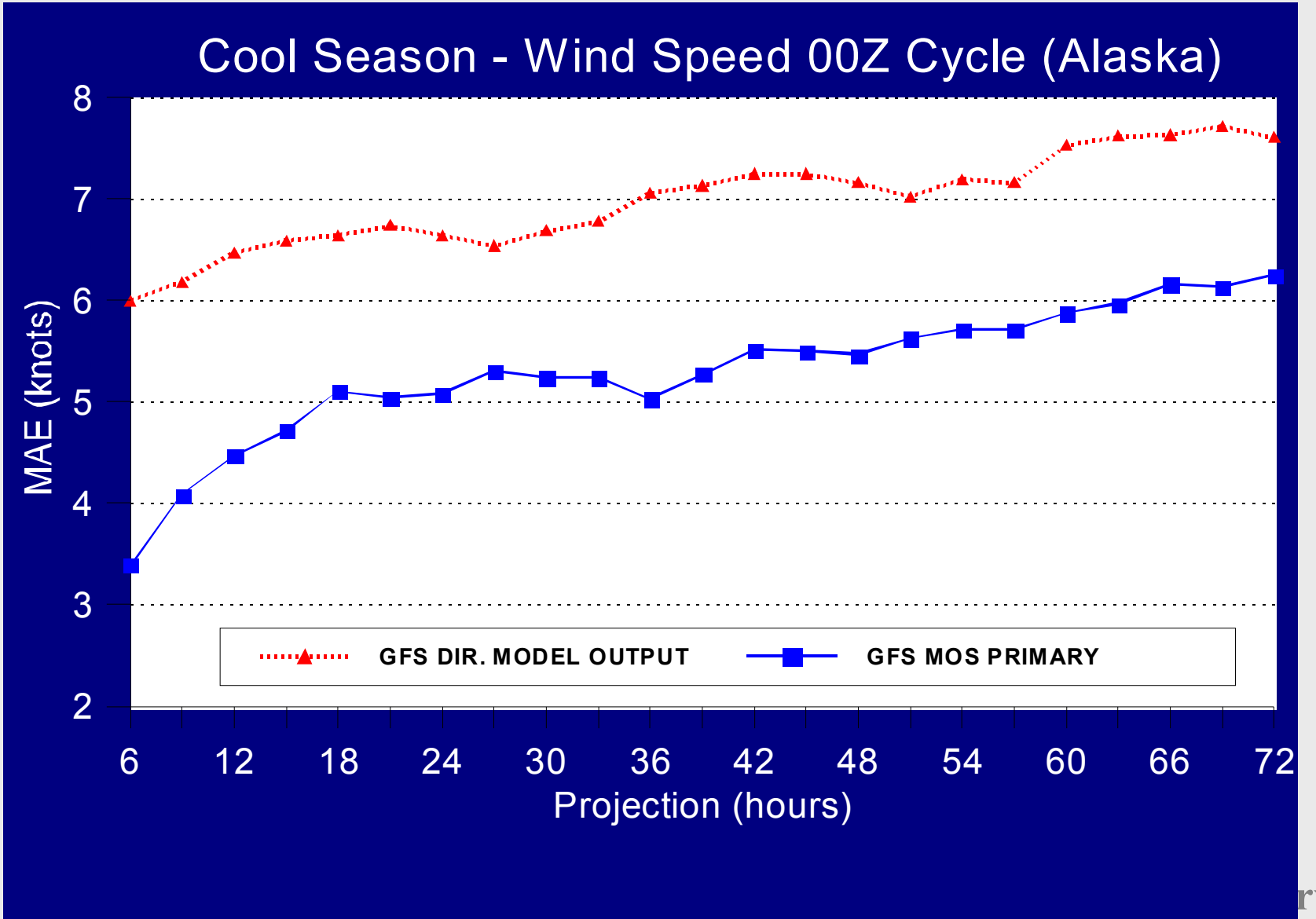
Gridded MOS

Objective: to produce MOS guidance on a high-resolution grid with spacing of 2.5 to 5 km between grid points, with a level of accuracy and skill comparable to that of the station-oriented guidance

MOS Improvement over Direct Model Output



Motivation

- Initialization for IFPS/GFE Process
- Recommendation of ISST (Sept. 19, 2003)
  - ***"The ISST also endorses the MDL gridded MOS activity. This proposal alone tackles model bias on a fast track and holds much promise for early improvements in centralized guidance."***

Approach

- High-resolution geophysical data
- High-resolution observations from remote-sensing networks
- Mesonet surface observations to supplement the standard reporting network
- Regionalized MOS equations
- Equations applied on high-resolution grid
- Blending of single-station and regional guidance on grid

Experimental Gridded MOS Products

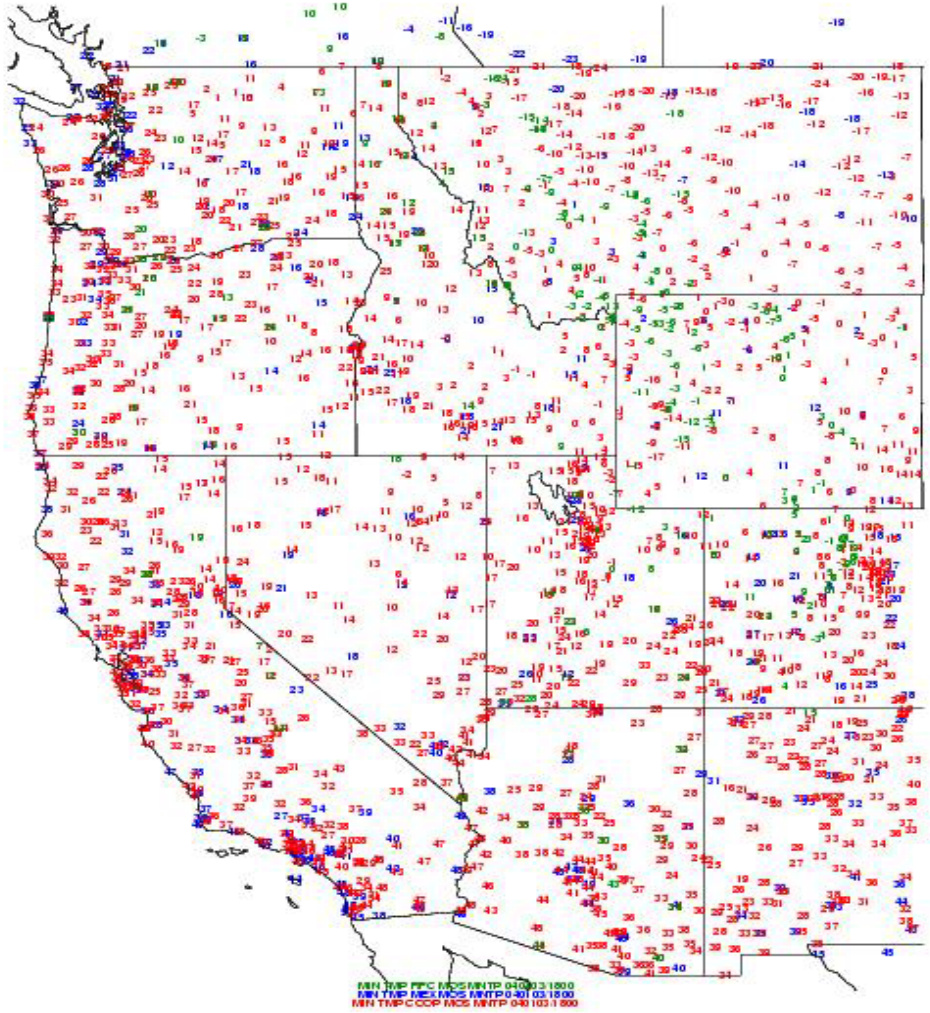
- GFS-based
- 0000/1200 UTC cycles only
- Selected Elements
  - Max/Min temperature, 2-m temperature & dewpoint
  - Probability of precipitation
  - Wind direction and speed
  - Probability of thunderstorms
  - Categorical 24-h snowfall amount
- Restricted area for initial implementation

Guidance for Co-op Observer Sites

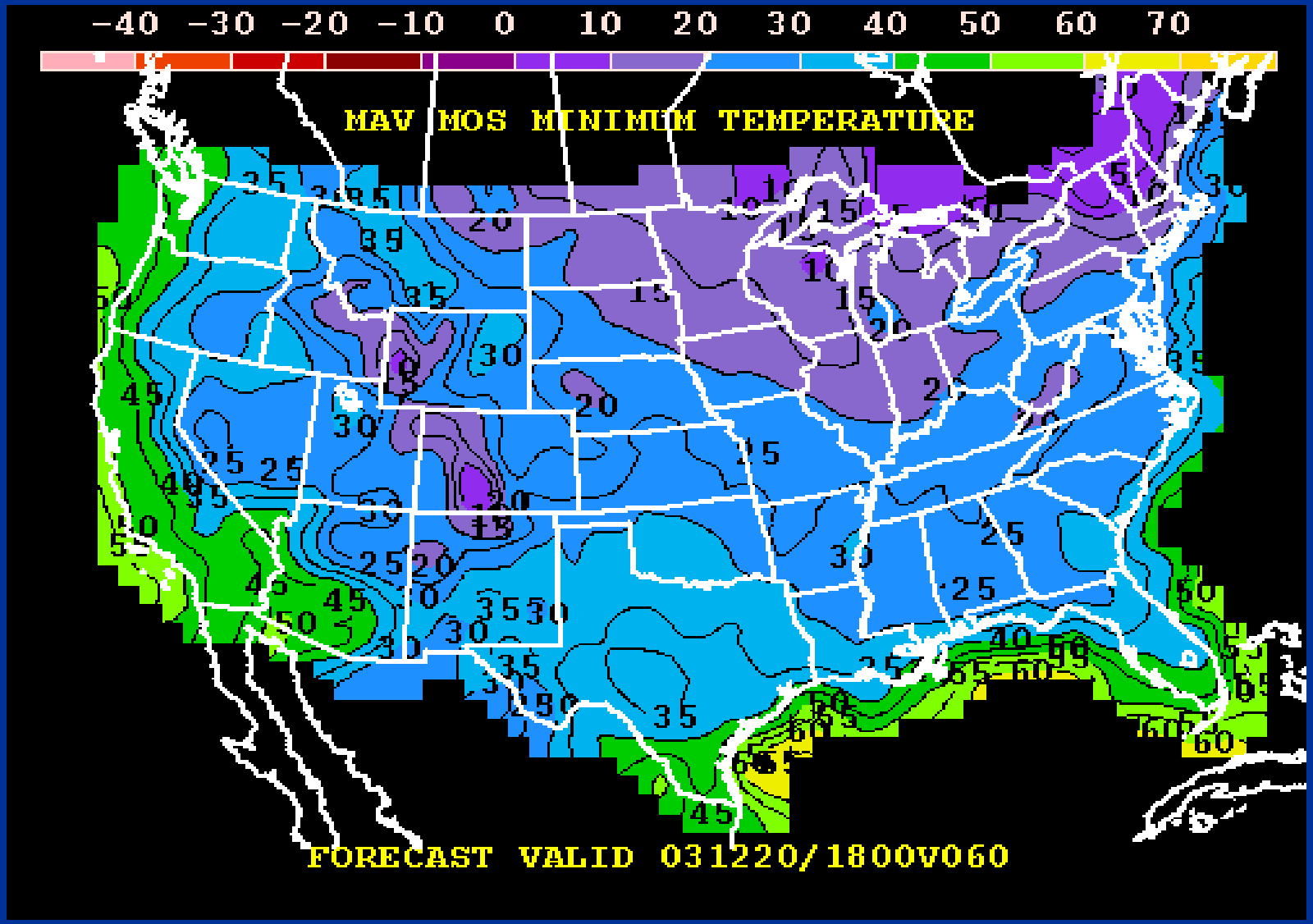
GFS-BASED MOS COOP MAX/MIN GUIDANCE 1/02/04 1200 UTC

	SAT 03		SUN 04		MON 05	
010160	50	69	53	69	52	52
010178	54	72	52	70	39	50
010252	55	75	53	75	56	59
010369	51	66	51	67	48	48
010390	55	67	55	64	30	48
010402	57	73	57	74	51	58
010425	50	68	52	69	46	55
010505	47	72	47	70	30	52
010583	58	73	60	74	56	60
010655	53	69	55	68	40	46
010764	52	72	52	71	37	54
011080	56	76	56	77	57	59
011084	53	74	54	76	59	60
011099	51	63	52	63	42	44
011301	55	74	57	74	51	54
011525	52	74	51	74	46	51
011566	53	76	54	75	53	62

High-resolution Guidance ?



GFS Min Temperature

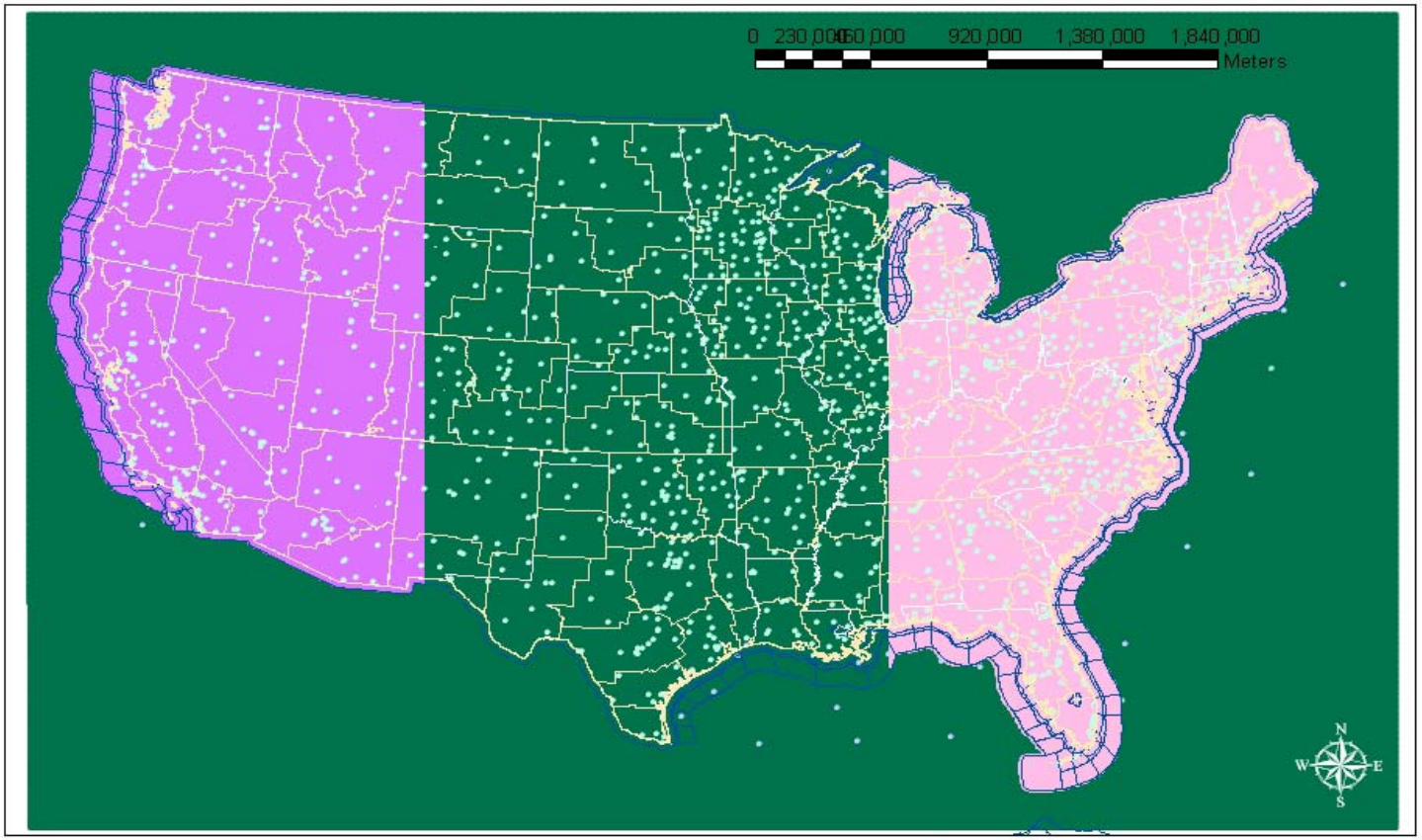


Initial Milestones

- Required datasets processed and available for development (January 31, 2004)
- MOS equations developed and tested (June 30, 2004)
- Experimental products implemented on NCEP's IBM (September 30, 2004)

Experimental Product Regions

Gridded MOS Operational Implementation Tiles



WFO Boundaries
States
Marine Zones and 25km Buffer
Marine MOS sites
MOS sites
NDFD CONUS grid
Operational Implementation Tile 1
Operational Implementation Tile 2

Operational Implementation Tile 1
Lower Left Point - 123.1045 W, 29.2422 N
Total Points of Clipped Tile - 106,205
Operational Implementation Tile 2
Lower Left Point - 88.3889W, 23.7364N
Total Points of Clipped Tile - 95, 015

Issues

- Scientific
- Computational
- Requirements Management Process